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**Skarda, Susan**

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**From:** Sheer, Linda  
**Sent:** Monday, December 14, 1998 10:29 AM  
**To:** Donahue, Lauri  
**Cc:** Jacobsen, Ken  
**Subject:** RE: Digital Millennium Copyright Act of 1998

NO. That's not what I'm saying.

The AGC circuits existed BEFORE the copy guard systems existed and the copy guard systems won't work without the AGC circuits. The manual controls were also present before the advent of copy guard in most of the more expensive VCR's. The manual switch was designed to allow the consumer to set the picture quality (within limitations) to their own preference and is now a normal part of most VCR's.

I don't think you can say that the manufacture of the piece of equipment has a secondary purpose when it existed first. The fact is that people misuse equipment all the times. The purpose of the AGC circuits is to make it possible to record video. Copy guard relies on the AGC circuits to work and shutting those circuits off or setting them to manual has the effect of taking away a portion of the VCR that the copy guard system uses. It is important to remember the AGC circuits were not ADDED to the equipment but existed first. VCR's will not work correctly without the AGC.

-----Original Message-----

**From:** **Donahue, Lauri**  
**Sent:** Monday, December 14, 1998 10:06 AM  
**To:** Sheer, Linda  
**Subject:** RE: Digital Millennium Copyright Act of 1998

So is what you're saying that this is a legitimate device that has the secondary purpose of being used to make illicit copies?

L.

-----Original Message-----

**From:** Sheer, Linda  
**Sent:** Friday, December 11, 1998 1:20 PM  
**To:** Donahue, Lauri; Jacobsen, Ken; Hirsch, Ric; Litvack, Mark  
**Subject:** RE: Digital Millennium Copyright Act of 1998

Lauri,

Yes the AGC is legitimate and important part of the VCR.

For a short and not too technical explanation (I hope).

Video is recorded between 0 to 100 IRE (IRE is a measurement and please don't get hung up on what it stands for. Its like an inch, its just a measurement and that's all that counts.) Video sync is recorded from 0 to -40 IRE. The color burst (which signals the TV that a recording is in color) is recorded between +20 and -20 IRE. All of this is important and will be clear (I hope) in just a few minutes.

The signal goes to -40 sync then to the color burst (which goes from -20 to +20) then to the video which ranges from black (7.5) to white (100) and back to the sync.

The AGC circuit is designed to keep these levels steady. If the video signal exceeds 100 IRE or the sync exceeds -40 IRE the AGC circuit lowers the signal to the appropriate level. 100 for video and -40 for the sync. If the levels are to low the AGC raises the levels to the correct levels.

Copy guard is designed to work by raising the peak video level to 150 IRE thereby causing the AGC circuit to lower the level by 50 units and distort the video. It is important to note that the AGC works in record only and not in playback. Also the AGC lowers the signal uniformly so it lowers the peak video level by 25 units and the sync by 25 units. When the sync is lowered (or in this case shortened by the 25 units, you have the situation of 40 IRE -25 IRE leaving the sync at -15 IRE. The color burst is from -20 IRE to +20 IRE so the machine will have two similar portions of the video signal to respond to. The true sync which is now at -15 IRE and the color burst which is at -20 IRE. This is what causes the picture to lose lock and roll while darkening.

If you turn off the AGC or set it to manual (meaning the operator can adjust it as they wish) you can lighten a very dark scene or darken a very light scene. Manual in most of the consumer VCR's is unity 1:1 as most VCR's do not have controls that allow the operator to adjust the levels. Those that do often have very limited

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controls which say "brighten" or "enhance". These are not true editing controls but instead set the video levels from about 80 IRE to 120 IRE depending on how much you turn the knob.

Hope this will help with your understanding. If I can clear this up any more by drawing the signal for you please let me know and I'll draw you a picture of the video signal both before and after the copy guard effect.

Linda

-----Original Message-----

**From:** Donahue, Lauri  
**Sent:** Friday, December 11, 1998 11:59 AM  
**To:** Sheer, Linda; Jacobsen, Ken; Hirsch, Ric; Litvack, Mark  
**Subject:** RE: Digital Millennium Copyright Act of 1998

Linda -

Re your comment that "many of the VCR's can be set to manual AGC (automatic gain control) and will not react to the copy guard.... it will be easy to buy those VCR's and set all the switches to bypass which in-effect makes the copy guard non-existent."

Does the AGC have any legitimate purpose?

Lauri

-----Original Message-----

**From:** Sheer, Linda  
**Sent:** Friday, December 11, 1998 11:35 AM  
**To:** Jacobsen, Ken; Donahue, Lauri; Hirsch, Ric; Litvack, Mark  
**Subject:** RE: Digital Millennium Copyright Act of 1998

Ken,

I can prepare this list. I will need a day or two to get the manufacturers and distributors. Some I do not know as I have seen the devices and their clones but do not know who made the original device let alone who is making the clones.

Also several of the electronic project magazines have circuit plan's for these devices. I suspect if Mikhail were to run a search on the Internet several sites which carry this information could be found.

I will break the list down into the following main categories.

- 1) Those with no "legitimate" uses, such as the RXII type devices. These were originally sold as stabilizers and were popular when copy guard systems interacted with the older TV's. At present most of these devices carry a warning which often reads as follows: " (the device name) is intended to stabilize and restore picture quality for private home use only. Use of this device to duplicate copyrighted video tapes may be against certain federal and state copyright laws."
- 2) Those with "legitimate" uses, such as the color correctors, enhancers and processors sold at RADIO SHACK and other do-it-yourself electronics companies. These devices don't really do enough to a video to be a true editing system but are sold as such. Most people just plug them into the video system, set all the controls to high and let it take out the copy guard.
- 3) The semi-professional editing equipment which has legitimate uses for the want-to-be home video buff. Most of these have the ability to effect some changes in the video and will take out the copy guard as an "added benefit". If you set all the controls to "unity" 1:1 you get an exact copy minus the copy guard. If you set the controls differently you will get an edited version of the original.
- 4) The professional editing equipment which is now being found in the pirate market. These include the Time Base Correctors which are sold as separate units, the high end VCR's with built in Time Base Correctors and other professional editing/processing equipment. These are rapidly becoming "state-of-the-art" for the larger pirate labs. (I do not think these will be covered by the legislation as these are actually used by the professional industry and are intended to produce the videos that ultimately wind up as the professional production. I will get the name of several devices and the category of function but to try and make a list of the names and manufactures would be the product list of any of the companies such as STEADY SYSTEMS. )

One very important note that seems to be overlooked by people is that the TBC's can be set to

correct the vertical interval for the width of the hammer head only and as a result will leave the copy guard intact. Several of the non-professional devices also leave the copy guard intact and therefor fit into a slightly different category than the devices that are intended to defeat or remove the signal.

On an additional point: many of the VCR's can be set to manual AGC (automatic gain control) and will not react to the copy guard. Because there's nothing worse then a tech with three minutes of law training (read my name here) I was wondering if a VCR with an AGC by-pass switch would also fall into the category of a device used for "circumvention of copyright protections systems". I realize that this may not be the intent of the legislation but it is still something to keep in mind as it will be easy to buy those VCR's and set all the switches to by-pass which in-effect makes the copy guard non-existent.

Linda

-----Original Message-----

**From:** Jacobsen, Ken  
**Sent:** Friday, December 11, 1998 10:11 AM  
**To:** Donahue, Lauri; Sheer, Linda; Hirsch, Ric; Litvack, Mark  
**Subject:** RE: Digital Millennium Copyright Act of 1998

I don't think this information will be useful in the beta test.

Ken

-----Original Message-----

**From:** Donahue, Lauri  
**Sent:** Friday, December 11, 1998 10:02 AM  
**To:** Jacobsen, Ken; Sheer, Linda; Hirsch, Ric; Litvack, Mark  
**Subject:** RE: Digital Millennium Copyright Act of 1998

Can we get this info in time to add it to the search on the eBay beta test? And is this something we would want to do? (We would need the info by sometime around the end of next week.)

Lauri

-----Original Message-----

**From:** Jacobsen, Ken  
**Sent:** Friday, December 11, 1998 9:59 AM  
**To:** Sheer, Linda; Hirsch, Ric; Litvack, Mark; Donahue, Lauri; Jacobsen, Ken  
**Subject:** Digital Millennium Copyright Act of 1998

Linda,

The new DMCA contains provisions which make devices used for "circumvention of copyright protections systems" unlawful under certain circumstances. We need to compile a list of those devices of which we are already aware that are used to defeat protection technology. Can you prepare such a list? Include the name of the device, what it does, the manufacturer if known, who sells it (if known), whether or not the device has any legitimate purpose and if so what that purpose is. I need this soon. Thanks,

Ken

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